SCIENCE

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Title Re: News Item on Work of Wollman and Jacob

Comments: I think that the letter of Lederberg is a valuable contribution and in view of the cited news items should be published in SCIENCE promptly. However, I feel that the author should be given the opportunity to modify certain statements, made in the first paragraph, that may be subject to misinterpretation by the reader.

1 The"previous editorial" refers to a news item about the 1953 Cold Spring Harbor Symposium in which a lengthy paper by Hayes was covered in two sentences. Obviously it was not possible to describe the various hypotheses offered by Hayes in this brief space so only that preferred by Hayes was given. The quote "virus" is taken out of context by Lederberg and so is misleading. The full quote is "genetic recombination may be mediated by an agent analagous to a virus ". This agent controls the fertility of the bacterial cell and the direction of genetic transfer and possibly acts as a vector of genetic material". If this news item is to be referred to by Lederberg, specific reference to volume and page of SCIENCE should be given.

Index

(continued on next sheet)

2. Lederberg refers to both news items as "editorials" or "editorial reviews". This is incorrect as these are factual news reports intended to convey to the reader the nature of the contents of specific papers. They do not reflect my opinion or that of SCIENCE, but only the opinions of the authors concerned. The only editorial action involved is in the selection and abstraction of material to be covered in news items. I think that most people will admit that the Symposium and the Jacob-Wollman paper are newsworthy events.

3. I do not know what Lederberg means by a "shift in viewpoint". I do not know whether either Hayes or Jacob has shifted his viewpoint. Because the two reports concern the expressed opinions of two different people there is no implication that either one has shifted his viewpoint. Certainly the editorial board of SCIENCE has not supported any viewpoint and hence cannot have shifted its viewpoint.

My own opinion is not particularly pertinent because it did not enter into the writing of either news item. However I fail to see that there is any necessary shift of opinion between the two articles. There is nothing in the symposium item which suggests that the organisms are not in contact at the time the"agent" transfers genetic material from one to the other. The Jacob item in referring to mating pairs does imply that the organisms are in contact at the time of transfer of genetic material from the F^+ to the F^- individual. It does not involve any necessary shift of viewpoint even between the two authors.

4. Lastly the Jacob news item did not state that this was an example of transduction. It stated that the end result of mechanical separation of the mating pairs is similar to that of transduction. I don't see how Lederberg can object to this statement; The end result of mechanical agitation is that the recombinants have incorporated only a fragment of the genetic material of the F+ cell, the particular fragment being determined by the time at which agitation occurred. Certainly this end result is not inconsistent with Lederberg's definition of transduction, regardless of what the mechanism may be. It is true that the mechanism may be quite different from that of the usual kinds of transduction.

A comment about Lederberg's letter as a whole might be made. He suggests that in the cited experiments fertilization might have been complete with later disturbances of chromosome pairing to account for the segregation effects. This may well be true and Lederberg's argument would be much more forceful and intelligible to the readers of SCIENCE if he would offer a mechanism by which mechanical agitation at certain times after mixing the populations could cause postzygotic damage of a type to account quantitatively for the highly specific recombinant types found.

Mark H. Adams